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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,388

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Shiro Torizuka

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11/25/2008

WENDEROTH, LIND & PONACK, L.L.P.

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SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

DELISLE, ROBERTA S

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,388	<b>Applicant(s)</b> TORIZUKA ET AL.	
	<b>Examiner</b> ROBERTA DELISLE	<b>Art Unit</b> 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 8/29/08 have been fully considered but they are not persuasive. **THIS IS A FINAL ACTION.**

2. Applicant's arguments with respect to claim 1, 5, 6 have been considered but are moot in view of the new ground(s) of rejection.

### **3. Claim Status:**

- a. Claim 1                      Currently Amended
- b. Claims 2-4 & 7-20      Cancelled
- c. Claims 5 & 6              Previously/Currently Withdrawn (see note below)

### ***Election/Restrictions***

4. This application contains claims 5-6 drawn to an invention nonelected without traverse in the reply filed on 8/29/08. It is noted that applicant has improperly amended these nonelected claims that were previously withdrawn from consideration as set forth in the office action summary form (PTOL-326 filed 5/29/08). Claims 10-20 were similarly withdrawn from consideration and appropriately cancelled by applicant. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821-04. For the purposes of examination, claims 5 & 6 have been withdrawn from consideration as drawn to an invention nonelected without traverse, and accordingly have not been treated on the merits.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino et al. (US 5,419,948) in view of Yasuhara et al. (US 6,221,179) and Gabriel et al. (US 5,489,179)

**Regarding Claim 1, Yoshino discloses:**

**(Currently Amended)** A screw or a tapping screw **(Abstract) made of steel** characterized in having [...] and a nitride layer in a surface, **wherein the nitride layer in the surface part has a 100 µm or less thickness (Column 2 Lines 56-60), hardness of the nitride layer of the surface part is 560 or more in Vickers hardness (Column 2 Lines 56-60, "surface hardness of (Hv) is 320 to 650 is within the range of 450 or more), ferrite in the vicinity of the nitride layer has a 1 µm or less average grain size (Abstract, Column 1 Lines 9-12, "average ferrite grain diameter of less than 2 µm" meets the "or less requirement"), [...], and [...] part.**

**Yoshino discloses a screw with a nitride layer but does not disclose an ultra fine structure of ferrite grains being 3 µm or less or an ultra fine structure of ferrite grains being 1 µm or less.**

**Yasuhara teaches:**

... an ultra fine structure of ferrite grains having a 3 µm or less average grain size ...

... **ferrite of a core part has a 3 µm or less** ...

**(Abstract, Column 1 Lines 9-12, "average ferrite grain diameter of less than 2 µm" meets the "or less requirement")**

**Examiner notes that Yoshino discloses a screw having a nitride layer. Yasuhara teaches the method of making steel with ferrite grains that are 2 µm or less. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Yoshino with a material made**

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with ferrite grains that are 2  $\mu\text{m}$  or less as taught by Yasuhara to provide ductility, toughness, and fatigue strength to the screw.

Examiner notes that cited reference Torizuka et al. (US 6,221,178 B1 April 24, 2001) specifically states "not larger than 3  $\mu\text{m}$ ."

Examiner notes that Yoshino discloses screw having a nitride layer. Yasuhara teaches the method of making steel with ferrite grains that are 2  $\mu\text{m}$  or less. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Yoshino with a material made with ferrite grains that are 2  $\mu\text{m}$  or less as taught by Yasuhara to provide ductility, toughness, and fatigue strength to the screw.

**Yoshino as modified by Yasuhara discloses a screw as described above but does not disclose a core with 199-450 Vickers hardness.**

Gabriel teaches:

... hardness of the core part is 199-450 in Vickers hardness (Column 1 Lines 37-42)...

Examiner notes that Yoshino as modified by Yasuhara discloses a screw. Gabriel teaches a screw with a core hardness of 40 to 45 Rockwell C. This range for the core hardness provides solid stability to the fastener. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Yoshino with a core hardness of 40 to 45 Rockwell C as taught by Panasik to provide the fastener with stability.

Examiner further notes that the range of 40 to 45 on the Rockwell C scale roughly converts to 392 to 446 on the Vickers hardness scale. Therefore it is within the range of 199 to 450 Vickers.

Regarding Claims 2-4, CANCELLED  
Regarding Claims 7-20, CANCELLED

### **Regarding Claim 5 (Previously/Currently Withdrawn: see note above)**

A production method for the screw or tapping screw according to claim 1, ~~characterized in that~~ wherein a low temperature soft-nitriding process is applied at a temperature of 480°C to 590°C to a compact of a screw or a tapping screw having an ultra fine structure of ferrite grains having a 3  $\mu\text{m}$  or less average grain size.

### **Regarding Claim 6 (Previously/Currently Withdrawn: see note above)**

The production method for a screw or a tapping screw according to claim 5, ~~characterized in that~~ wherein a low temperature soft-nitriding process is applied at a temperature of 500°C to 550°C.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERTA DELISLE ("Bobbi") whose telephone number is (571) 270-3746. The examiner can normally be reached on M-F 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Victor D. Batson can be reached on (571) 272- 6987. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor Batson/  
Victor D. Batson  
Supervisory Patent Examiner  
Art Unit 3677

rsd